



US006297945B1

(12) **United States Patent**
Yamamoto

(10) Patent No.: **US 6,297,945 B1**
(45) Date of Patent: **Oct. 2, 2001**

(54) **PORTABLE ELECTRONIC TERMINAL
APPARATUS HAVING A PLURALITY OF
DISPLAYS**

5,646,649 * 7/1997 Iwata et al. 345/175
5,673,170 * 9/1997 Register 361/681
6,134,103 * 10/2000 Ghanma 361/681

(75) Inventor: **Katsuhisa Yamamoto**, Shinagawa-ku
(JP)

* cited by examiner

(73) Assignee: **Ricoh Company, Ltd.**, Tokyo (JP)

Primary Examiner—Leo P. Picard

Assistant Examiner—Hung Van Duong

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(74) *Attorney, Agent, or Firm*—Oblon, Spivak, McClelland,
Maier & Neustadt, P.C.

(57) **ABSTRACT**

A portable electronic terminal apparatus includes a main body, an information input mechanism, a plurality of displays, a communications mechanism, and a flip panel. The main body has a hollow section. The information input mechanism inputs various kinds of information including data and instructions. Each of the displays shows the various kinds of information input through the input mechanism. The communications mechanism transmits and receives the various kinds of information input through the input mechanism. The flip panel is movably mounted on the main body and is configured to rotate to open and close about a side edge portion of the flip panel. This flip panel is retracted in the hollow section of the main body when the flip panel is closed. In addition, one of the displays is mounted on the flip panel.

(21) Appl. No.: **09/537,265**

(22) Filed: **Mar. 29, 2000**

(30) **Foreign Application Priority Data**

Mar. 29, 1999 (JP) 11-086099

(51) Int. Cl.⁷ **G06F 1/16**

(52) U.S. Cl. **361/681; 361/682; 345/169;**
345/905; 312/223.1; 455/450

(58) Field of Search 351/681, 682;
248/917; 345/169, 905; 312/223.1, 1.6,
223, 7, 2; 455/450

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,508,720 * 4/1996 DiSanto et al. 345/169

12 Claims, 9 Drawing Sheets

